

Remarks/Arguments

Claims 1 and 11 have been amended. Claims 25-30 have been withdrawn. New claims 31-34 have been added.

Rejection under 35 U.S.C. § 112

In the Office Action, the Examiner rejected claim 11 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, claim 11 recites the limitation "wherein **the** deep trench isolation . . ." when there was no antecedent basis for such a limitation. Accordingly, claim 11 has been amended to change its dependency from claim 1 to claim 2.

Rejections under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1, 4-10 and 13 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Pub. No. 2002/0066929 to Steven H. Voldman ("*Voldman*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

As for claim 1, claim 1 has been amended and now recites:

an apparatus, comprising:
a semiconductor device formed on a conductivity region, the conductivity region comprises a first type doping material having a first doping concentration;
and
a low resistive path barrier formed surrounding the conductivity region to isolate the conductivity region from a substrate that supports the conductivity region and the low resistive path barrier, the low resistive path barrier comprises the first type doping material having a second doping concentration, wherein the second doping concentration is greater than the first doping concentration.

In the Office Action, the Examiner alleges that *Voldman* teaches each and every feature of original claim 1. However, claim 1 has been amended to include features that are not taught in *Voldman*. In particular, claim 1 now recites a conductivity region comprising "a first type doping material having a first doping concentration" and a low resistive barrier comprising "the first type doping material having a second doping

concentration, wherein the second doping concentration is greater than the first doping concentration.” *Voldman* does not teach such features. Further, one skilled in the art would not be motivated to modify the teachings of *Voldman* such that the integrated circuit structure of *Voldman* would have such features since *Voldman* **specifically teaches** an isolation (i.e., conductivity) region (20) of **a first doping type** and a buried diffusion region (i.e., low resistive path barrier) 30 of **a second doping type**. See *Voldman*, paragraph [0044]. For at least these reasons, claim 1 is patentable over *Voldman*.

Claims 4-10 and 13 depend from and add additional features to independent claim 1. Therefore, for at least the same reason that claim 1 is patentable over *Voldman*, claims 4-10 and 13 are also patentable over *Voldman*.

Rejection under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 2, 3, and 11 under 35 U.S.C. § 103(a), as being unpatentable over *Voldman* in view of U.S. Patent 5,614,750 to Ellul et al. (“*Ellul*”). Applicant respectfully requests reconsideration of this rejection for at least the following reasons.

Claims 2, 3, and 11 depend from and add additional features to independent claim 1. The deficiencies of *Voldman* as described above with regard to claim 1 are not cured by the teachings of *Ellul*. For at least this reason, claims 2, 3, and 11 are patentable over *Voldman* in view of *Ellul*.

Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Voldman* in view of U.S. Patent No. 5,939,755 to Takeuchi et al. (“*Takeuchi*”). Applicant respectfully requests reconsideration of this rejection for at least the following reasons. Claim 12 depends from and adds additional features to independent claim 1. The deficiencies of *Voldman*, as described above with regard to claim 1, is not cured by the teachings of *Takeuchi*. For at least this reason, claim 12 is patentable over *Voldman* in view of *Takeuchi*.

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Voldman* in view of U.S. Patent No. 5,635,742 to Hoshi et al. (“*Hoshi*”). Applicant

respectfully requests reconsideration of this rejection for at least the following reasons. Claim 14 indirectly depends from and adds additional features to independent claim 1. The deficiencies of *Voldman*, as described above with regard to claim 1, is not cured by the teachings of *Hoshi*. For at least this reason, claim 14 is patentable over *Voldman* in view of *Hoshi*.

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Voldman* in view of *Ellul* and in further view of U.S. Patent App. No. 2003/0211701 to Desko et al. ("*Desko*"). Applicant respectfully requests reconsideration of this rejection for at least the following reasons. Claim 15 depends from and adds additional features to independent claim 1. The deficiencies of *Voldman*, as described above with regard to claim 1, is not cured by the teachings of *Ellul* and/or *Desko*. For at least this reason, claim 14 is patentable over *Voldman* in view of *Hoshi* and in further view of *Desko*.

New Claims

New claims 31-34 have been added. Support for the new claims may be found in the specification.

Conclusion

In view of the foregoing, the Applicant respectfully submits that claims 1-15, and 31-34 are in a condition for allowance. Early issuance of Notice of Allowance is respectfully requested.

If the Examiner has any questions, he is invited to contact the undersigned at (503) 796-2099.

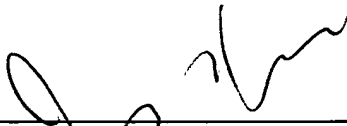
The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393.

Respectfully submitted,

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